

without exception, at sea-coast stations, the most exposed stations having the least ranges; and that the greatest ranges occur at the more elevated stations, especially in the region north of the 40th parallel and west of the 96th meridian.

Frosts were observed as follows:—On the 6th, at Denver, Col.; 13th, at Logansport, Ind., and Cape May; 22nd and 23rd, at Fort Madison, Iowa; 26th, Camp Halleck, Nev., and Virginia City, Mon.; 27th, Bismarck, Dak.; 31st, Toledo, Ohio, and nightly at Halleck station (C. P. R. R.) Nev., and Summit, Col.

Ice.—The formation of ice, rather than frosts, was reported from Halleck station, Nev., nightly during latter part of month.

PRECIPITATION.

In General.—The general distribution of rain for the month is shown on Chart No. III. The table in the lower left-hand corner gives the precipitation, in the various districts, by which it will be seen that there has been quite a large deficiency in the Middle, South Atlantic and Gulf States, and in Minnesota, while a slight excess is reported in Tennessee and the Upper Lake region. It is a notable feature of the precipitation for this month, that the most of it has occurred during heavy showers of short duration and over quite limited areas, thus giving to certain districts an excess, at the expense of the surrounding country. Considerably over the average amount has fallen in Oregon, but with one exception of 0.03, no rain is reported in California.

Special heavy rains.—The following are the most notable cases of heavy rains that have been reported: 1st, Key West, 1.47; Cape Lookout, 3.85 inches; (1.50 in. in ten minutes.) 2nd, Goldsboro, N. C., (2nd and 3d) 2.00 in.; Weldon, N. C., 2.62 in.; Greenville, N. C., (2nd and 3d) 5.69 in. 3d, Dodge City, Kan., 2.42; Cape Lookout, 3.10 in. 6th, Denver, Col., 1.00 in 25 minutes; Charleston, 1.27; Keokuk, Iowa, 2.40; North Platte, Neb. 1.84. 7th, Portland, Me., 2.36; Ft. Gibson, Ind. Ter., 1.94; Ft. Sill, Ind. Ter., 1.21 in.; Goldsboro, N. C., 2.50 in. 8th, Augusta, Ga., 1.82; Memphis, Tenn., 2.78; Escanaba, Mich., 1.27 in. in 20 minutes; Rio Grande, Tex., 2.65 in.; Forsyth, Ga., 2.50 in., over 2 inches falling in 45 minutes; Brookhaven, Miss., 2.10 in. 9th, Portland, Me., 2.15; Wilmington, N. C., 2.84; Orono, Me., (9th and 10th) 2.30 in. 10th, Eastport, Me., 2.12 11th, North Platte, Neb., (in 30 minutes) 2.00. 12th, Cape May, N. J., 2.10; North Platte, Neb., 1.46. 13th, New Haven, Conn., 2.75. 14th, Newark, N. J., Alpena, Mich., 2.50; Tybee Island, 2.02. 15th, Portsmouth, N. C., 2.29; Freehold, N. J., 2.48 in. 16th, Mt. Washington, N. H., 2.90. 18th, Hartford, Conn., 3.45 inches; Tybee Island, 1.80. 19th, Tybee Island, 2.45. 20th, Oregon, Me., (20th and 21st) 3.45 in.; Emerson, Neb., 2.10 in.; Howard, Neb., 2.02 in.; Wolfeboro, N. H., 2.60 in.; Tabor, Iowa, 2.61 in. 21st, Corsicana, Tex., 2.01; Fort Gibson, Ind. Ter., 1.42; Denison, Tex., 1.16; Jacksboro, Tex., 2.01; Louisville, Ill., 2.00 in.; Beloit, Wis., 2.00 in. 22nd, (22nd and 23d, Nashville Tenn., 2.80; St. Marks, Fla., 3.95; Savannah, Ga., 1.92; Martinsville, Ill., 2.52 in.; Spiceland, Ind., 2.17 in. 23d, Wilmington, N. C., 3.51; Alpena, Mich., (23d and 24th) 4.57; Alpena, Mich., 3.36 in. (1.07 in. in 35 minutes;) Martinsville, Ill., 2.63 in. 24th, Trenton, N. J., 4.30 in. 25th, Albany, N. Y., 1.63; New London, Conn., 2.37; (25th and 26th;) Mt. Washington, (25th and 26th) 3.83; Portland, Me., (Ft. Preble) 25th and 26th, 2.20 in.; Arco, N. J., 2.68 in.; Lunenburg, Vt., (25th and 26th) 2.60 in.; Tabor, Iowa, 3.00 in.; Mystic, Conn., 4.00 in.; Somerset, Mass., 2.28 in.; Fall River, Mass., (25th and 26th) 2.60 in.; Springfield, Mo., 2.00 in., (in 20 minutes.) 26th, Newport, R. I., 1.97; Breckenridge, Minn., 1.53; Nora Springs, Iowa, (26th and 27th) 2.40 in. 27th, La Crosse, Wis., 2.55; Boonsboro, Iowa, (27th and 28th) 5.15 in. 28th, Dubuque, Iowa, 2.80; Ames, Iowa, (28th and 29th) 4.12 in.; Cleveland, Iowa, 2.60 in.; Geneva, Wis., 2.13 in.; Beloit, Wis., 4.00 in. 29th, Milwaukee, Wis., 1.63; Boonsboro, Iowa, 4.10 in. 30th, La Crosse, Wis., 1.69; St. Paul, Minn., 1.83. 31st, Norfolk, Va., 1.75; Cleveland, Ohio, 2.59; Detroit, Mich., 2.02; Erie, Pa., 1.11; Port Huron, Mich., 1.22; Sandusky, Ohio, 2.80; Toledo, Ohio, 1.74; Martinsville, Ill., 2.75 in.; Painesville, Ohio, 2.80 in.; Hudson, Ohio, 3.40 in.; Venice, Ohio, 2.10 in.; Cleveland, Ohio, 2.07; Manitowoc, Wis., 2.19 in.

Small Monthly Rain-falls.—The following stations report small rainfalls: In California; San Francisco, Sacramento, Visalia, Los Angeles and San Diego report no rain-fall; Red Bluff, 0.03; in Arizona; Yuma, 0.06; Stanwix, 0.13; in Nevada, Winnemucca, 0.00; Pioche, 1.18; Salt Lake City, Utah, 0.28; Roseburg, Oregon, 0.25; Boise City, Idaho, 0.09; in Texas; Stockton, 0.37; Eagle Pass, 0.35; Edinburg, 0.11; Fredericksburg, 0.19; Castroville, 0.00; Shreveport, La., 0.20; in the Middle States, Baltimore, 0.64; Philadelphia, 0.66; in the Province of Ontario, Can., Port Stanley, 0.96; Toronto, 0.12, and Kingston, 0.47.

Large Monthly Rainfalls.—Rainfalls of seven inches or more are reported, as follows: Mount Washington, 11.11; in Florida; Daytona, 10.77; Punta Rasa, 8.33; St. Marks, 7.90, and St. Augustine, 7.05; North Carolina; Wilmington, 10.46; Greenville, 9.10; Brookhaven, Miss., 8.15; Boonsboro, Iowa, 10.00; Martinsville, Ill., 7.84; in Michigan; Alpena, 7.90; Detroit, 7.23; Fort Wayne, 7.65; in Maine, Portland, 7.90; Cornish, 7.45, and Chatham, N. B., 7.48.

Droughts.—Droughts, injurious to vegetation, have been reported as follows: Michigan—Salem, 22nd, "the most severe drought known here for some time, rendering plowing impossible, terminated, but present showers will put ground in good condition;" Northport, "corn and early potato crops injured by drought." Maryland—Baltimore, 25th, "in the country around, corn is suffering, grass badly burned, small streams and wells failing; Druid Lake lower than at any time since 1872;" Harford county, drought of greater or less severity. Pennsylvania—Philadelphia, records smallest rain-fall for seven years. Ohio and Indiana—in northern portions, "especially dry summer: considerable portion of corn crop utterly hopeless;" Ringgold, corn, potato, tobacco and fruit crops injured; Westerville, corn crop suffering. Iowa—Rockford, 12th, "crops suffering;" Cresco, 16th, "country all parched up: corn and vegetables nearly destroyed;" Gutenberg, "corn damaged by dry weather;" Nora Springs, drought continued until the 20th, injuring potatoes and corn. Texas—Clarksville, cotton growth checked by ten weeks drought. Virginia—Wytheville, "drought severe, ground too hard to plow." Tennessee—Knoxville, "late crops injured by drought."

Floods.—New Jersey—16th, R.R. track at Carpenterville flooded; 24th, Trenton, "doing much damage and delaying almost all trains." New York—25th, Albany, basements flooded and much damage to new buildings and excavations. Connecticut—New Haven, 13th, damage to cellars, &c.; New London, 25th, damage to railroads \$250,000. New Hampshire—Mt. Washington, 26th, "bridges in valleys around base of mountain washed away." Missouri—St. Louis, 31st, streets flooded, Iron Mountain R. R. track submerged.

Hail-storms.—Hail has been reported as follows: 2nd, Bismarck, Dak.; 3rd, Summit, Col.; 5th, Breckenridge, Minn., North Argyle, N. Y.; 6th, Denver, Col., Monticello, Iowa; 7th, Portland, Me., Mt. Washington, N. H., Cheyenne, W. T., Lunenburg, Vt.; 8th, Escanaba, Mich., North Argyle, Hector and Starkey, N. Y.; 10th, Owasco and Albany, N. Y., Mt. Washington, N. H., Erie, Pa., Woodstock, Vt.; 11th, Cordova, Ill., Yankton, Dak., Boonsboro, Iowa; 12th, Harrisburg, Pa., Murphy, N. C.; 13th, Canterbury, Del., Indianapolis, Ind., Vevay, Ind., Bethel, Ohio; 15th, Summit, Col.; 16th, in northern part of N. J., Lehman and Delaware, Pike Co., Pa., Ft. Sanders, W. T., Como, Ill., Genoa, Neb., Oneida, N. Y.; 17th, near Houston, Texas, St. Louis, Mo., Ft. Bridger, W. T., Ringgold, O.; 18th, North Platte, Neb., Rockford, Iowa, near Mendon, Mass., Jacksonburg, Ohio, Brownsville, Pa.; 19th, Camp Hancock, near Wilkesbarre, Pa., Ft. Sanders, W. T.; 20th, Emerson and Genoa, Neb., Oregon, Mo.; 21st, Fallston, Sandy Springs and near Centreville, Md., track of storm two to three miles wide and nearly ten miles long; great damage to corn and fruit; Denison, Texas, Manitowoc, Wis., Brookhaven, Miss.; 22nd, Southington, Conn.; 25th, Tabor, Iowa, Emerson, DeSoto, Plattsmouth, Clear Creek and Howard, Neb.; Oregon, Mo.; 26th, Linden, N. J.; 28th, Brookhaven, Miss., DeSoto, Neb., Beloit, Wis.; 29th, Amoskeag, N. H., Austin, Tenn.; 30th, Summit, Col.; 31st, Sandusky, Cleveland, Painsville, Venice, Ohio, Milford, Ind., Detroit, Mich. Hail was reported on the summit of Pike's Peak on 14 days.

Large Hail-stones.—8th, at Escanaba, stones unusually large. 9th, Gloucester, near Ottawa, Ontario, Can., weighed 3 ounces, completely destroying crops. 19th, Camp Hancock, Wilkesbarre, Pa., large as marbles. 21st, Centreville, Md., one weighing one-fourth of a pound. 29th, Austin, Texas, large hail stones, damaging tobacco and corn. 31st, Cleveland, Ohio, half inch to one and a quarter inch in diameter; Detroit, half inch in diameter.

Snow.—Snow was reported on ten days on the summit of Pike's Peak, Col.

Rainy Days.—The number of days on which rain has fallen, as recorded by Signal Service observers, ranges as follows: New England, 9 to 19; Middle Atlantic States, 8 to 14; South Atlantic States, 10 to 16; East Gulf States, 6 to 16; West Gulf States, 1 to 7; Tennessee and the Ohio valley, 8 to 12; Missouri valley, 9 to 10; Upper Mississippi valley, 2 to 12; Upper Lake region, 7 to 16; Lower Lake region, 9 to 17; Rocky Mountain stations, 3 to 13; California, 0 to 2.

Cloudy Days.—The number of cloudy days, reported during the month by Voluntary Observers and Army Surgeons, ranges about as follows: New England, 4 to 13; Middle Atlantic States, 1 to 11; South Atlantic States, 0 to 5; East Gulf States, 1 to 7; West Gulf States, 0 to 3; Tennessee and Ohio valley, 0 to 8; Lower Missouri valley, 0 to 4; Upper Mississippi valley, 0 to 7; Lake region, 0 to 11; Rocky Mountain stations, 0 to 7; California, 1 to 7.

RELATIVE HUMIDITY.

The average relative humidity for the month ranges about as follows: New England, 71 to 88; Middle Atlantic States, 61 to 78; South Atlantic States, 69 to 78; East Gulf States, 58 to 81; West Gulf States, 55 to 67; Tennessee and Ohio valley, 64 to 69; Lower Missouri valley, 63 to 66; Upper Mississippi valley, 56 to 70; Upper Lakes, 64 to 75; Lower Lakes, 63 to 73; California, 32 to 79.

High stations, not corrected for elevation, report as follows: Mt. Washington, 88; North Platte, 57; Cheyenne, 37; Denver, 35; Santa Fe, 37; Salt Lake City, 25.